DENTAL UNIT AND CHAIR

Rapport

OPERATING INSTRUCTIONS

IMPORTANT

**This manual provides operating instruction for BELMONT RAPPORT.
The instructions contained in this booklet should be thoroughly read and understood before operating of the system.
File this manual and refer back to it for future maintenance.**

Belmont®

CE 0197

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Intended Use of the Product

This product is an active therapeutic device intended for the exclusive use for diagnoses, treatments and relative procedures of dentistry.

The product must be operated or handled by the qualified dentists or by dental staffs under the supervision of the dentist.

Such dentists or dental staffs should instruct and/or assist the patients to approach to and leave from the product.

Patients should not be allowed to operate or handle the product unless he/she is so instructed.

The product is supplied together with the handpieces like electric micromotor, air turbine and/or motor, scaler and so on.

Environmental Requirements

Ambient Temperature	Operating +5°C - +40°C	Storage -10°C - +50°C
Humidity	10 % - 80%	
Atmospherical Pressure	600 hPa - 1060 hPa	

Compatibility of Handpieces

Use the compatible handpieces as shown on the attached list for this unit. (List of compatible handpieces).

Important Notes

In case of the troubles, please contat Takara Belmont offices or your dealers.

Do not disassemble or attempt to repair.

Disassembly, repair or modifications shoud only be done by a qualified repair technician.

Attempts at disassembly, repair or modifications may lead to abnormal operation and accidents.

In case of disposal of equipment

In case of disposal of equipment or of components dismounted from the unit, take full infection preventing measures, and carry out appropriate steps in accordance with the legal regulations at that time.

SYMBOLS

LP	Chair last position	0	Chair auto return	P1	Chair preset1		Chair auto control
	Chair manual control		Chair auto control		To raise the chair		To lower the chair
	To Recline the backrest		To raise the backrest		Treatment position		Consultation position
	Toothbrushing position		Handpiece Setting		Fiber optic handpiece light on//off		Micro motor otation mode select
E	Micro motor Forward/Reverse select		Handpiece water flow control		Handpiece memory		Fiber optic handpiece light on//off
	Handpiece coolant water on/off		Handpiece coolant air on/off		Micro motor speed control		Dental light on/off
F. 0	Flush out		Syringe	F	Function		Store
	Bowl flush		Cupfiller		Dental light ON/OFF		Stand by
	Timer		Alarm		Chair lock indicator		Water heater
W	Water	A	Air		Non-ionizing radiation		Type B Applied Parts
	Manufacturer		Date of manufacture		Caution It means “caution, warnings, or possibility to danger”.		Separate collection for electrical and electronic equipment
EC REP	Authorized representative in the European community						

1. OVERALL VIEW AND MAJOR COMPONENTS

1-1. TABLE UNIT AND DOCTOR UNIT SECTION

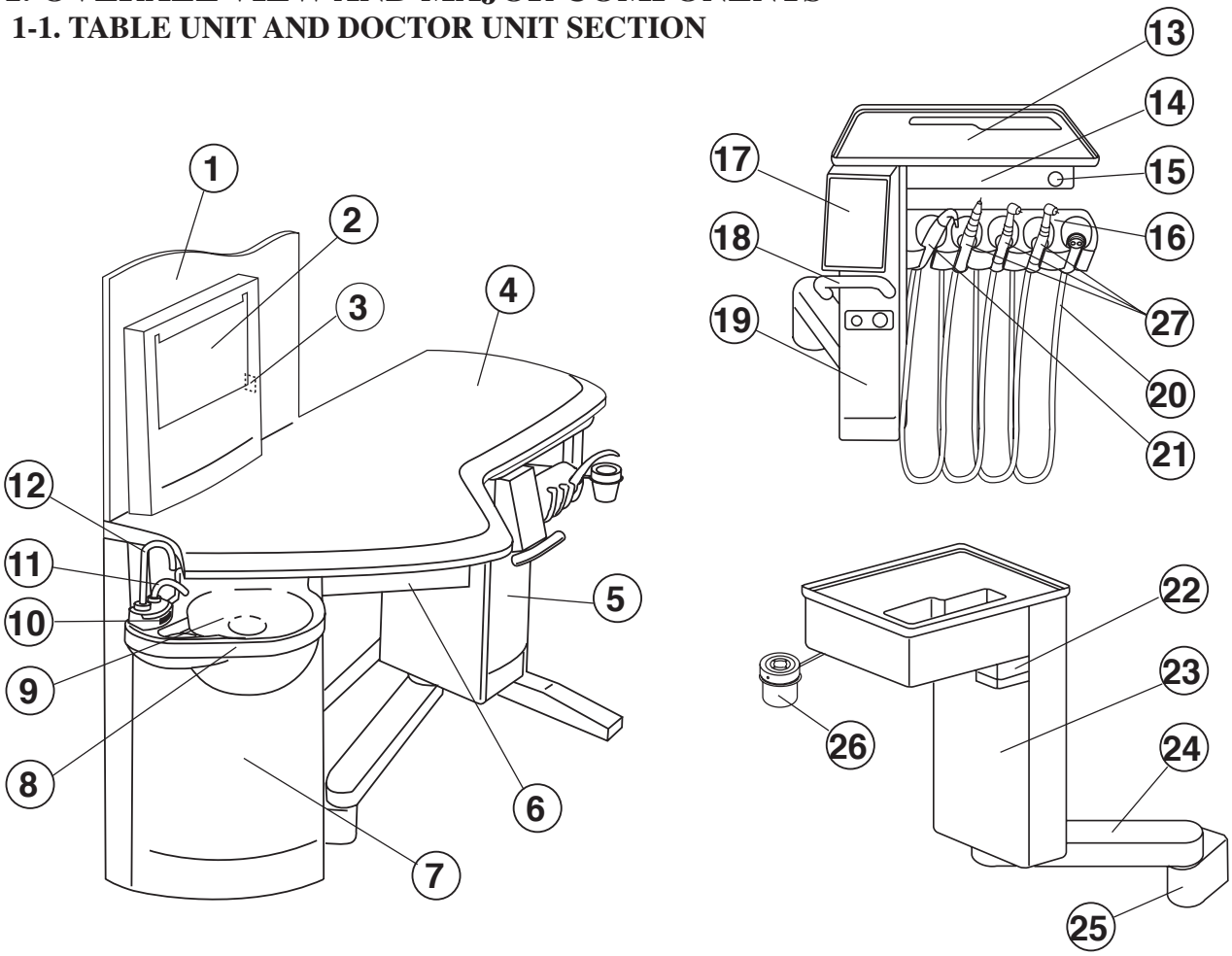


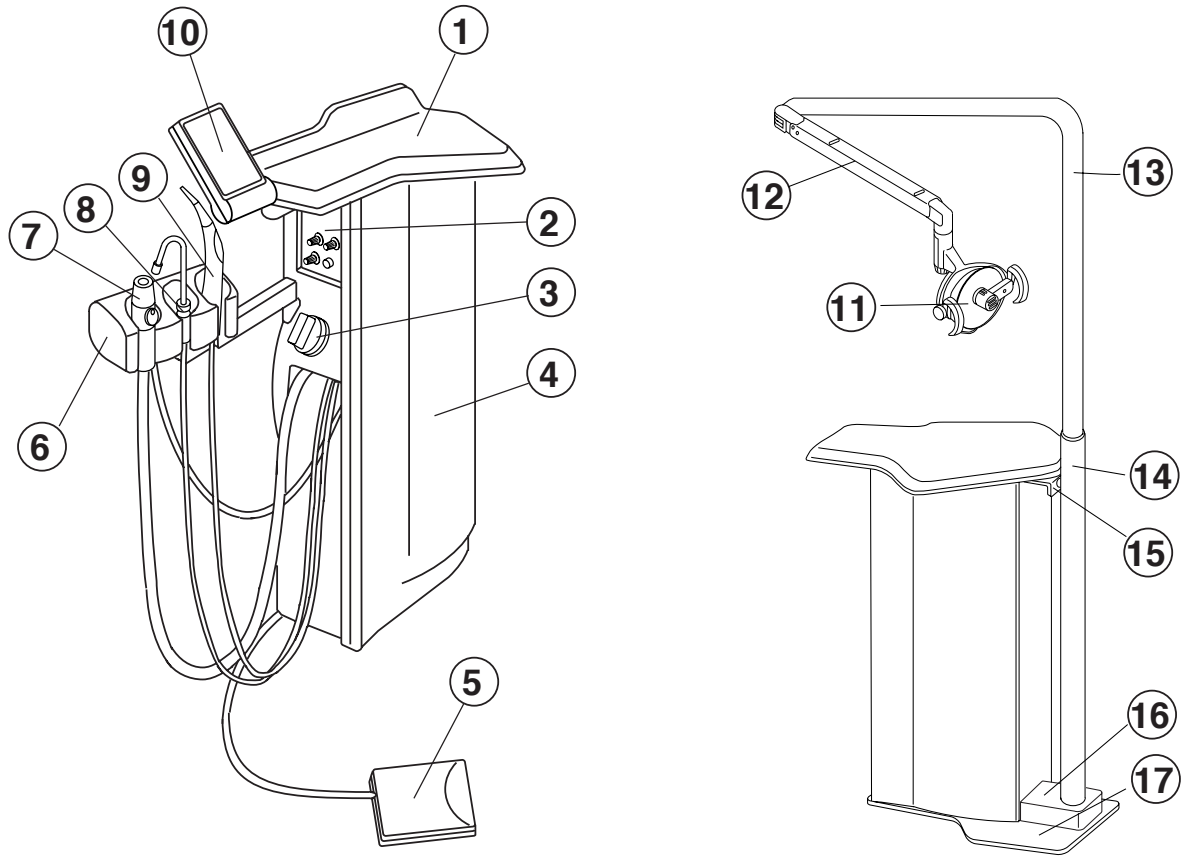
Table Unit Section **Doctor Unit Section**

Fig.1-1 Table Unit and Doctor Unit Section Overall View

TABLE UNIT AND DOCTOR UNIT SECTION MAJOR COMPONENTS

1. Partition Panel
2. Panorama Viewer
3. Master Switch
4. Table unit Top
5. Doctor Unit
6. Printer Case
7. Side Cover
8. Cuspidor Cover
9. Cuspidor Bowl
10. Cupfiller Sensor
11. Bowl Flush Nozzle
12. Cupfiller Nozzle
13. Doctor Unit Table Top
14. Table Housing
15. Handpiece Pressure Gauge
16. Doctor Unit Handpiece Holder
17. Doctor Unit Control Panel
18. Handle
19. Doctor Unit Front Cover
20. Handpiece Tubing
21. Doctor's Syringe
22. Oil Mist Separator
23. Doctor Unit Frame
24. Table Arm
25. Table Flange
26. Waste Receptacle
27. Handpieces
    (Micromotor, Air Turbine/Motor,
    Scaler and etc.) Manufacturers recommend
    to use the handpieces with CE markings

1-2. ASSISTANT UNIT AND DENTAL LIGHT SECTION



Assistant Unit Section **Pole Mount Light (IO 5000)**

Fig.1-2 Assistant Unit and Dental Light Section Overall View

ASSISTANT UNIT AND DENTAL LIGHT SECTION MAJOR PARTS

1. Assistant Unit Table Top
2. Cuspidor Unit Control Panel
3. Solid Collector
4. Side Panel
5. Foot Controller (SP Type)
6. Assistant Side Instrument Holder
7. Vacuum Handpiece
8. Saliva Ejector
9. Assistant's Syringe
10. Assistant Unit Control Panel
11. Light Head
12. Balance Arm
13. Light Pole
14. Light Post
15. Light Bracket
16. Light Base Cover
17. Light Base

1-3. CHAIR SECTION

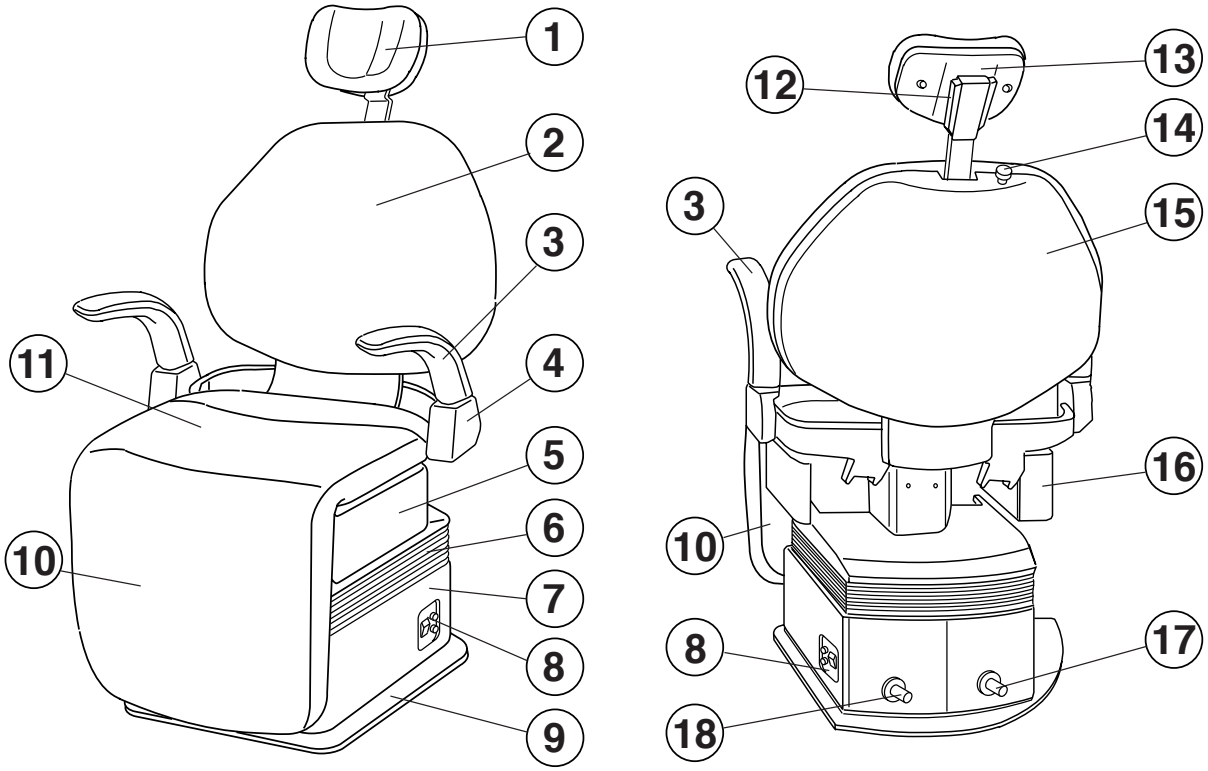


Fig.1-3 Chair Section Overall View

CHAIR SECTION MAJOR PARTS

1. Headrest
2. Backrest
3. Armrest
4. Side Frame
5. Side Cover
6. Bellows
7. Pump Cover
8. Chair Main Switch
9. Base Plate
10. Legrest
11. Seat
12. Headrest Angle Lock Lever
13. Headrest Cover
14. Chair Rotation Lock Release Button
15. Backrest Cover
16. P.C.B. Cover
17. Chair Manual Control Stick Switch
18. Ceiling Light Control Stick Switch

2. DIMENSIONS

2-1. CHAIR DIMENSIONS

-mm-

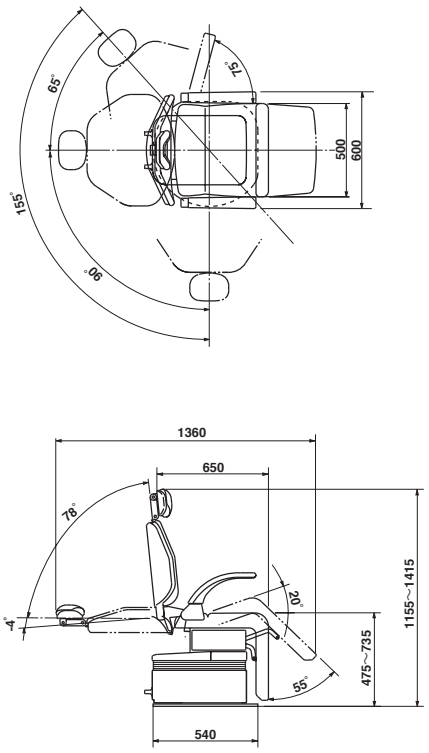


Fig.2-1 Chair Dimensions

2-2. TABLE UNIT DIMENSIONS

-mm-

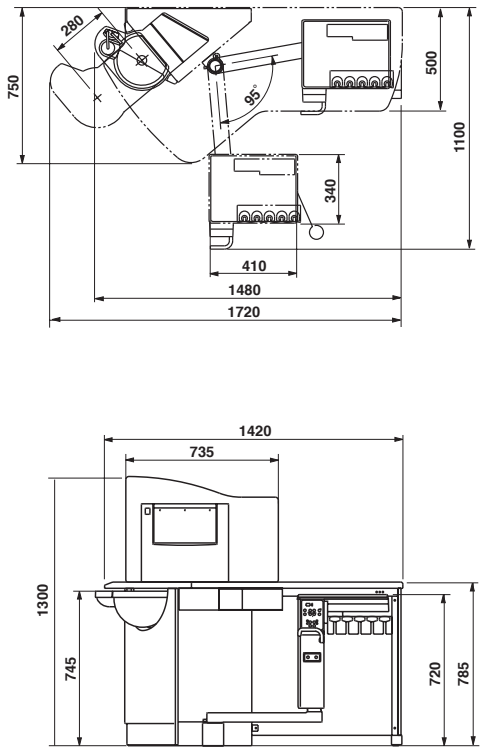


Fig.2-2 Table Unit Dimensions

2-3. ASSISTANT UNIT DIMENSIONS

-mm-

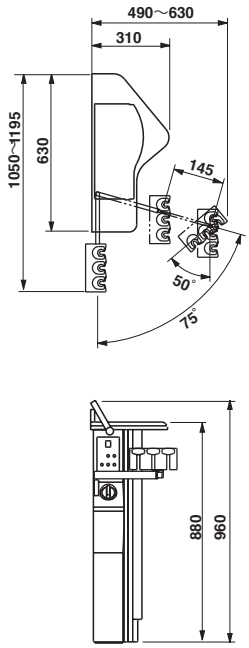


Fig.2-3 Assistant Unit Dimensions

2-4. POLE MOUNT LIGHT (IO 5000) DIMENSIONS (OPTIONAL)

-mm-

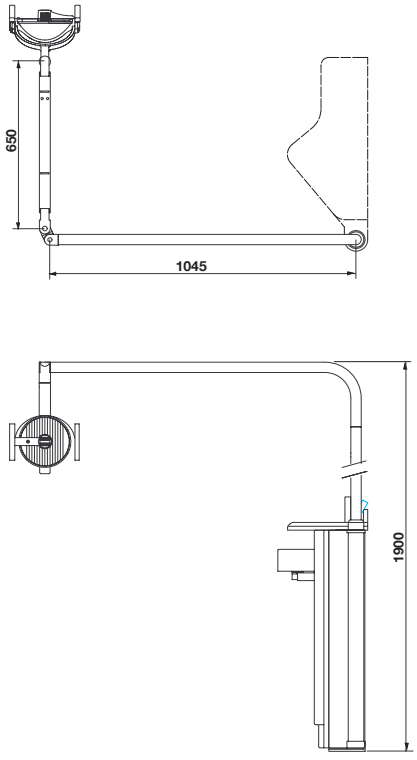


Fig.2-4 Pole Mount Light (IO 5000) Dimensions

3. LAYOUT AND SPECIFICATIONS

3-1. LAYOUT

Completed Rapport setting position layout is shown in **Fig.3-1**.

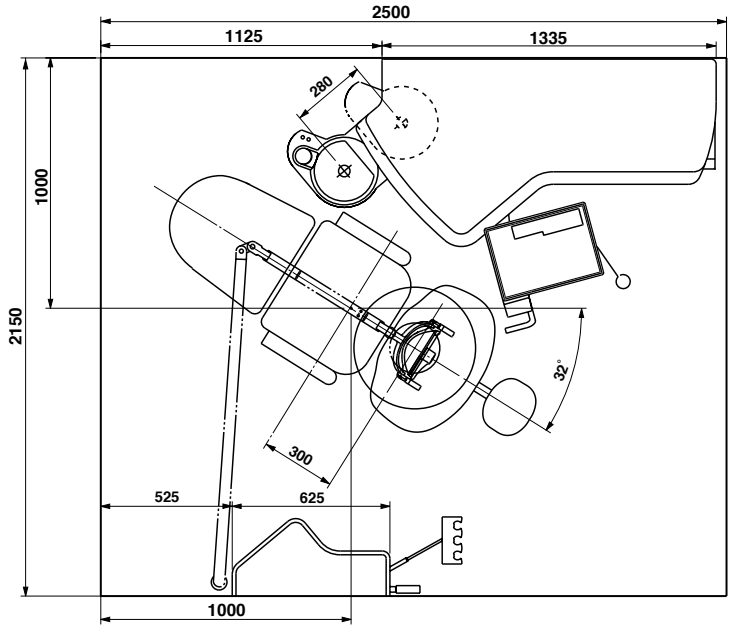


Fig.3-1 Setting Position Latout

3-2. SPECIFICATIONS

Chair Section	Seat Initial Height	475mm
	Seat lifting Stroke	260mm
	Backrest Angle	0 ~ 82˚
	Chair Rotation	138˚ (Right 90˚, Left 48˚)
	Control Voltage	DC12V
	Power Consumption	AC230V, 50Hz, 510W
	Maximum Load	135 kg
	Net Weight	122kg
Unit Section	Power Requirement	AC230V, 50Hz 3.4A
	Compressed Air Pressure Requirement	0.54 - 0.59 Mpa(5.5 - 6.0 kg/m^2)
	Compressed Air Supply Capacity	60 l/min
	Water Pressure Requirement	0.14 - 0.19 Mpa(1.5 - 2.0 kg/m^2)
	Saliva Ejector	Central Type
	Vacuum	Central Type
	Table Unit Net Weight	95kg
	Doctor Unit Net Weight	25kg
	Assistant Unit Net Weight	20kg
Pole Mount Light (IO 5000) Section	Power Requirement	AC230V, 50Hz
	Light Intensity	28000/22000/15000Lx
	Colour Temperature	5000K
	Net Weight	12kg
	Service Life	10 Years

4. OPERATING INSTRUCTIONS

4-1. MASTER SWITCH AND CHAIR MAIN SWITCH

Note : Before operation, confirm that air compressor is fully charged.

The chair can be operated only when both the master switch and the chair main switch are ON.

(1) Master Switch (**Fig.4-1**)

Turn on the master switch located on side of the film viewer, master switch illuminates in green.

⚠CAUTION

Turn off the master switch after daily operation.

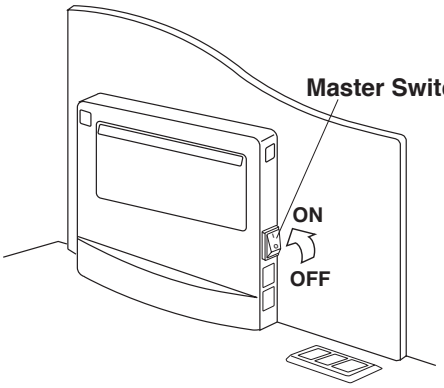


Fig.4-1 Master Switch

(2) Chair Main Switch (**Fig.4-2**)

⚠CAUTION

Operate the chair main switch only by hand.

Turn on the chair main switch located on the left side of the pump cover, chair main switch illuminates in green.

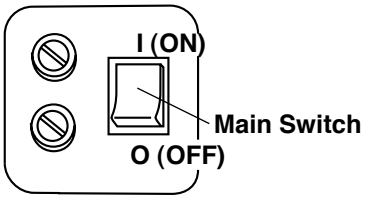


Fig.4-1 Chair Main Switch

4-2. CONTROL PANELS (Fig.4-3 & Fig.4-4)

Control panels and switch locations and functions are shown in **Fig.4-3** and **Fig.4-4**.

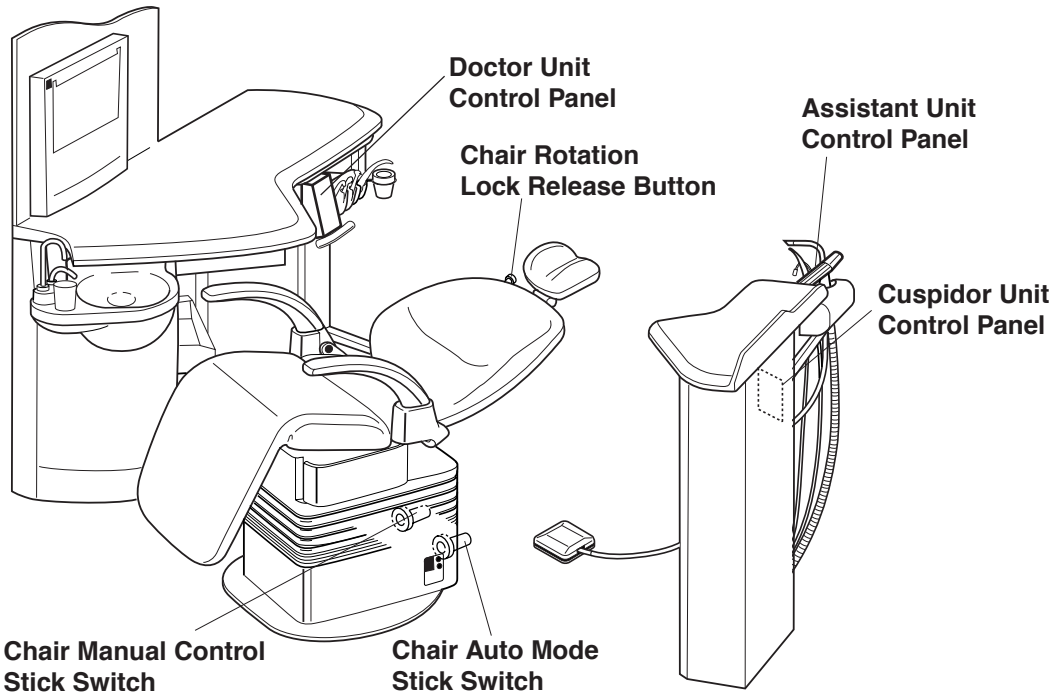


Fig.4-3 Control Panels and Switch Positions

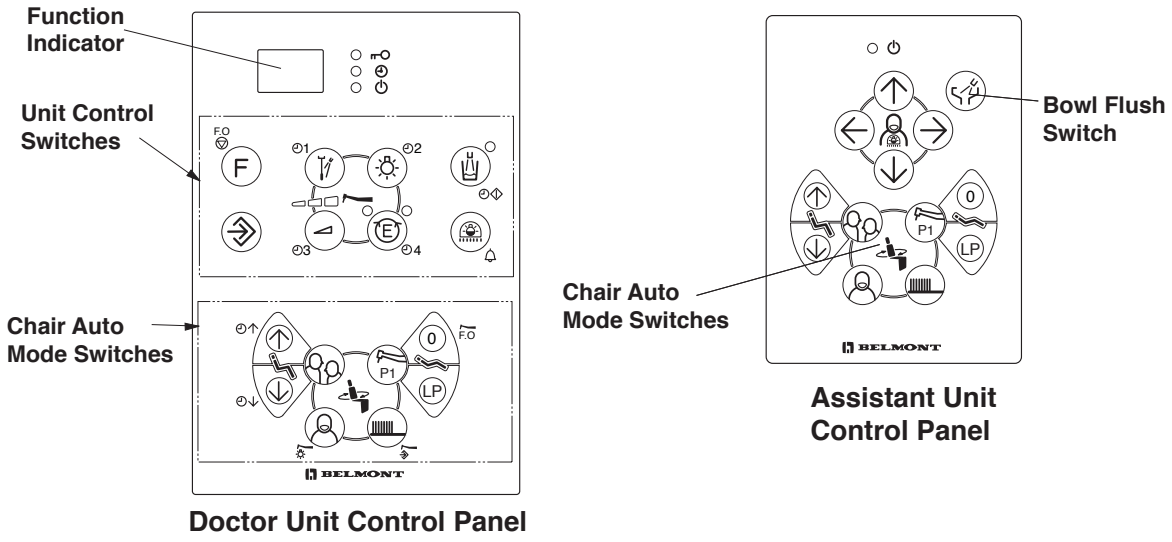


Fig.4-4 Control Panel Functions

4-3. CHAIR POSITIONS AND CHAIR OPERATING INSTRUCTIONS

⚠CAUTION

Before operating the chair, confirm safety for the patient and the operator.

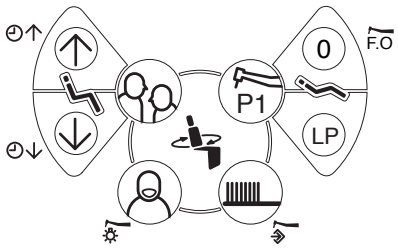


Fig.4-5 Chair Auto Mode Switches

Chair auto mode movements are controlled by chair auto mode switches. (**Fig.4-5**)

(1) Initial Position (**Fig.4-6**)

This position is for patient's entry to and descent from the chair.

Chair rotation angle is 0˚ with lowest seat position and upright backrest position.

Momentarily depress the auto return switch (⓪) on the control panel, chair will return to the initial position automatically from any position.

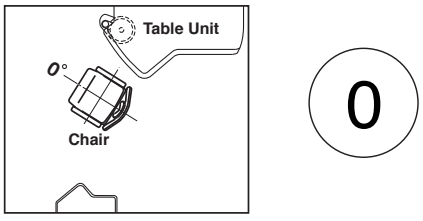


Fig.4-6 Initial Position and Auto Return Switch

Note : Each chair rotation angle described here is lotated clockwise from initial position (0˚).

(2) Consultation Position (**Fig.4-7**)

This position is for consultation.

Chair rotation is 90˚with lowest seat position and upright backrest position.

Momentarily depress the consultation position switch (ⓐ) on the control panel, chair will rotate to the consultation position automatically.

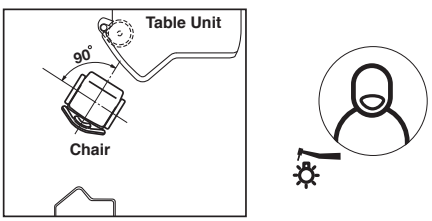


Fig.4-7 Consultation Position and Consultation Position Switch

Note : Any chair manual control switch can not be operated at this position for safety.

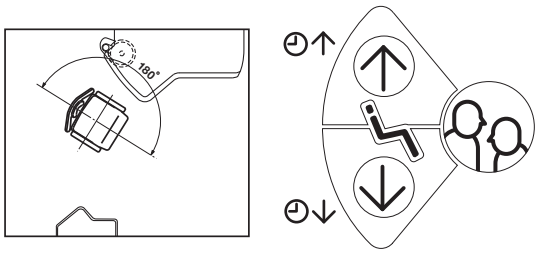


Fig.4-8 6 O'clock Position and 6 O'clock Position Switch

(3) 6 o'clock Position (**Fig.4-8**)

This position is for 6 o'clock treatment or examination (face to face treatment position).

Chair rotation is 180˚with lowest seat position and upright backrest position.

Momentarily depress the 6 o'clock position switch ( ) on the control panel, chair will move to the 6 o'clock treatment position automatically.

Chair seat height can be adjusted at this position, by depressing (ⓤ) or (ⓓ) switch on the control panel.

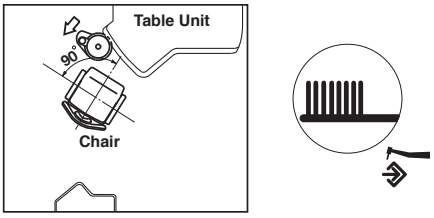


Fig.4-9 Toothbrushing Position and Toothbrushing Position Switch

(4) Toothbrushing Position (**Fig.4-9**)

This position is for toothbrushing training.

Chair rotation is 90˚ with lowest seat position and up right backrest position. Cuspidor bowl comes out from the table unit automatically.

Momentarily depress the toothbrushing position switch ( ) on the control panel, chair will move to the toothbrushing position and cuspidor bowl will come out to the left side of chair from the table unit automatically.

Note : Any chair manual control switch can not be operated at this position for safety.

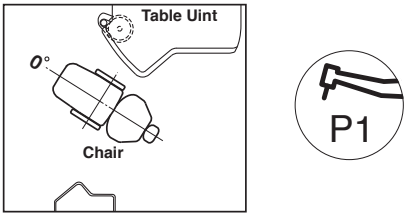


Fig.4-10 Treatment Position and Preset Switch

(5) Treatment Position (Preset Position) (**Fig.4-10**)

This position is for treatment.

Chair rotation angle is 0˚ with memorized seat height and memorized backrest angle.

Treatment position seat height and backrest angle can be memorized independently.

Momentarily depress the Preset Switch ( ) on control panel, the chair will move to the treatment position automatically.

Seat height and backrest angle can be adjusted by the stick switch at this position.

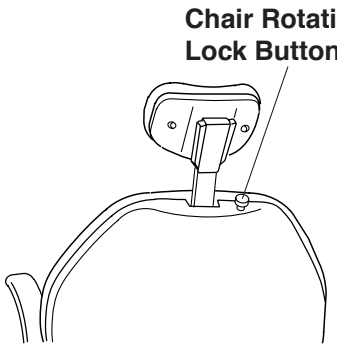


Fig.4-11 Rotation Lock Button

(6) Chair Rotation Manual Adjustment (**Fig.4-11**)

⚠CAUTION

Do not press the rotation lock button during automatic procedure.

Chair rotation can be adjusted by manual control.

Keep pressing the chair rotation lock button,to rotate the chair.

Adjust chair rotation angle to the desired position and release the rotation lock button.

In case rotated over the rotation limit, an alarm buzzer sounds. Rotate the chair between rotation limits.

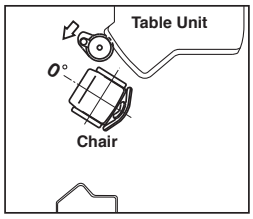


Fig.4-12 Last Memory Position and Last Position Memory Switch

(7) Last Position Memory (**Fig.4-12**)

Momentarily depress the last position memory switch (Ⓛ) on the control panel at the treatment position, the backrest will raise to upright position and the seat lowered to mouth rinsing and the cuspidor bowl will come out to the right side of chair from the table unit automatically.

Momentarily depress the last position memory switch (Ⓛ) again, the backrest and seat will return to the previous treatment position and the cuspidor bowl will be retracted into the table unit.

Note : Last position memory is effective only at the treatment position.

(8) Emergency Stop

During automatic procedure, depressing any button or stick switch will cancel the automatic movement immediately.

Note : After emergency stop, confirm the safety and return the chair to the initial position by depressing the auto return switch (⓪) button, then reset the chair position.

(9) Manual Control by Stick Switch (**Fig.4-13**)

Manual mode chair control stick switch is located on the right side of pump cover rear.

A. Seat Lifting ----------Keep pressing the stick switch to upward until the seat is lifted up to the desired position.

B. Seat Lowering ----------Keep pressing the stick switch to downward until the seat is lowered to the desired position.

C. Backrest Reclining-----Keep pressing the stick switch to left side until the backrest is reclined to the desired position.

D. Backrest Raising -------Keep pressing the stick switch to right side until the backrest is raised up to the desired position.

(10) Headrest Operation (**Fig.4-14**)

A. Height Adjustment---- Press or pull up the headrest to the desired height.

B. Angle Adjustment ---- Push the headrest angle lock lever to rotate backward and release the headrest angle lock lever at the desired position.

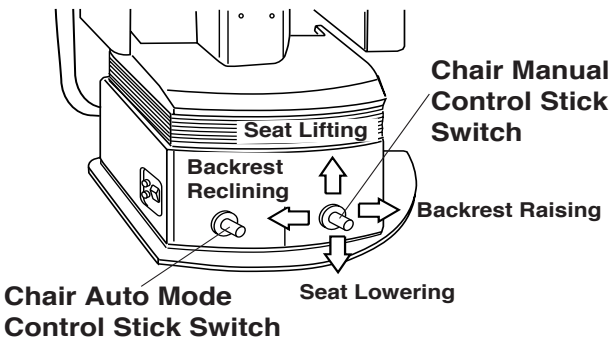


Fig.4-13 Manual Control Stick Switch

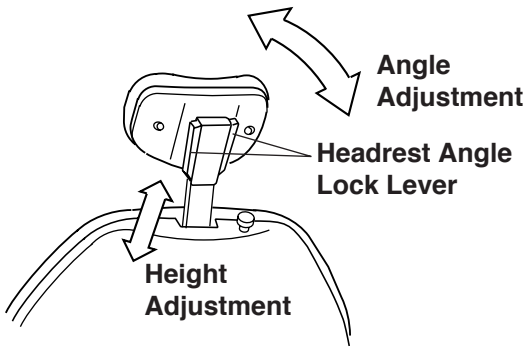


Fig.4-14 Headrest Operations

4-4. UNIT OPERATING INSTRUCTIONS

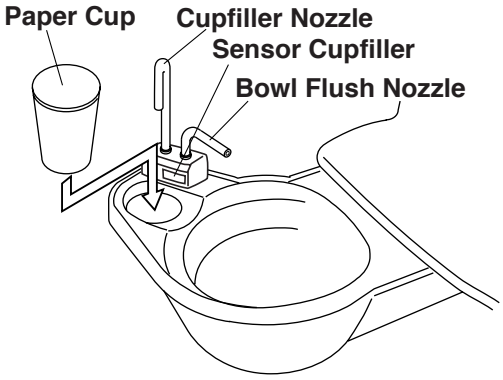


Fig.4-15 Sensor Cupfiller

(1) Sensor Cupfiller (**Fig.4-15 & Fig.4-16**)
Place a cup (paper cup) on the cuffiller base, water comes out from the cupfiller nozzle to fill the cup, and stops automatically.
During filling the cup , momentarily pressing the cupfiller switch (ⓤ) will stop filling.

Note : Use suitable disposable paper cup only.
Empty the cup before placing it on the base to prevent water from overflowing.

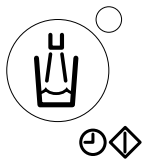


Fig.4-16 Cupfiller Switch

(2) Cupfiller Switch (**Fig.4-16**)
Momentarily press the cupfiller switch (ⓤ), cupfiller water comes out from the cupfiller nozzle for about 4 seconds and stops automatically.
During the cupfilling, pressing the cupfiller switch (ⓤ) stops filling.
The indicator illuminates during the cupfiller is working.

Fig.4-17 Bowl Flush Switch

Note : Do not press the cupfiller switch when a cup is not on the cupfiller base.

(3) Bowl Flush Switch (**Fig.4-17**)
Momentarily press the bowl flush switch (ⓑ), bowl flush water flushes for about 6 seconds from the bowl flush nozzle and stops automatically.
During the bowl flushing, pressing the bowl flush switch (ⓑ) stops bowl flushing.

Fig.4-18 Extra Switch

(4) Extra Switch (**Fig.4-18**)
The extra switch (ⓐ) can be used for the dental light ON/OFF switch.

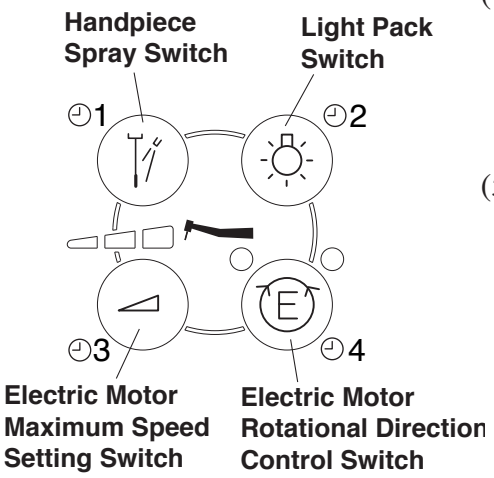


Fig.4-19 Handpiece Control Switches

(5) Handpiece Control Switches (**Fig.4-19**)
A. Handpiece Spray Switch
When this switch is illuminated, spray water comes out of the handpiece if it is taken from holder and foot controller pedal is depressed.
Momentarily pressing the handpiece spray switch (ⓕ) will stop spray water.
When the master switch is turned on, the handpiece spray switch (ⓕ) turns on and the indicator illuminates automatically.

B. Light Pack Switch (**Optional**)
Momentarily press the light pack switch (☼), the indicator illuminates and the fiber optic power turns on until the light pack switch is pressed again.
Fiber optic handpiece lighting mode : Refer to 4-5 (4)

C. Electric Motor Rotational Direction Control Switch (**Optional**)
Rotational direction of the electric motor can be changed by momentarily pressing the direction control switch (Ⓔ), and rotational direction is indicated by the indicator.

Note : Do not change rotational direction during electric motor is running.

D. Electric Motor Maximum Speed Setting Switch (**Optional**)
The maximum speed of electric motor can be set. The maximum speed is indicated on the indicator. The maximum speed can be select 3 steps and 5 steps. (It depends on electric motor type.)
3 Steps Speed Selection : 10000rpm, 20000rpm, 40000rpm
5 Steps Speed Selection : 5000rpm, 10000rpm, 20000rpm, 30000rpm, 50000rpm

(6) Foot Controller (**Fig.4-20**)
Pick up a handpiece from handpiece holder and depress the foot controller pedal, the handpiece starts running and spray water and air comes out from the handpiece.
Handpiece rotation speed can be controlled by the pressure of depressing the foot controller pedal.
During air handpiece is runing, the drive air pressure is indicated in the handpiece pressure gauge.

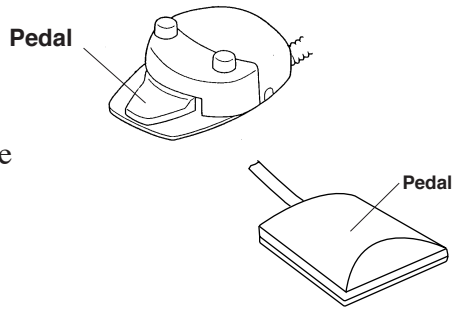


Fig.4-20 Foot Controller

Note : Spray water and air ON/OFF can be controlled by the handpiece spray switch. Refer to 4-4, (5) A.

A. Safety Lock System
During a handpiece is running, the lock indicator illuminates on the doctor unit control panel and all movements of chair are locked for safety.

B. First Priority System
If a handpiece is taken from the handpiece holder, any other handpiece will not operate for safety.

(7) Assistant Side Instrument Holder
Pick up a instrument (Saliva Ejector or Vacuum Handpiece) from the assistant holder, and it starts working automatically.

Note ; In central vacuum system, the vacuum handpiece (HVE) will keep working for about 8 seconds after it is returned to its holder to clean the inside of vacuum hose.

(8) Doctor Unit Section Control Knobs (**Fig.4-21**)

A. Handpiece Spray Water Control Knob
The handpiece spray water control knobs are located at the front side of doctor table bottom.
Each handpiece spray water control knob is lined up from the facing left side HP1, HP2, HP3, HP4.
The handpiece spray water can be controlled independently.

B. Handpiece Spray Air Control Knob
The handpiece spray air control knob is located at the front side of doctor table bottom.
The handpiece spray air for all handpieces is controlled by an air control knob.

C. Doctor's Syringe Flow Control Knobs.
Doctor's syringe flow control knobs are located at the right side of doctor unit bottom.
The doctor's syringe flow control knobs adjust doctor's syringe air and water flow.
The yellow capped knob is the air flow control knob, the blue capped knob is the water flow control knob.

D. Flush Out water Control Knob
The flush out water control knob stops flush out water.
This knob is provided to stop flush out for emergency.
Keep the knob open under normal condition.

Note : Turning a control knob counterclockwise increases flow volume and turning clockwise decreases. (**Fig.4-22**)

Handpiece
Refer to handpiece manufacturers operating instructions.

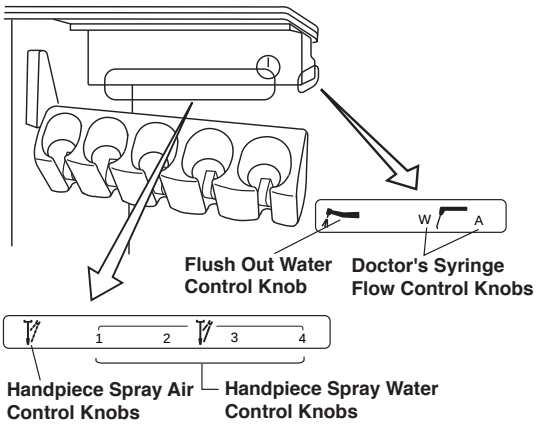


Fig.4-21 Doctor Unit Control Knobs

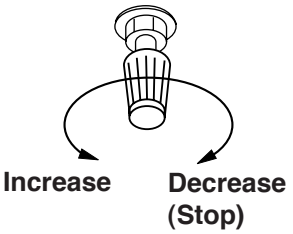


Fig.4-22 Control Knob

(9) Table Unit Section Control Knobs (**Fig.4-23**)

A. Cupfiller Flow Control Knob
The cupfiller flow control knob is located under the cuspidor bowl.
The flow control knob adjusts the cupfiller to suitable flow volume.

B. Bowl Flush Flow Control Knob
The bowl flush flow control knob is located under the caspidor bowl.
The flow control knob adjusts the bowl flush flow to optimum rinse action.

Note : Turning a control knob counterclockwise increases flow volume and turning clockwise decreases. (**Fig.4-22**)

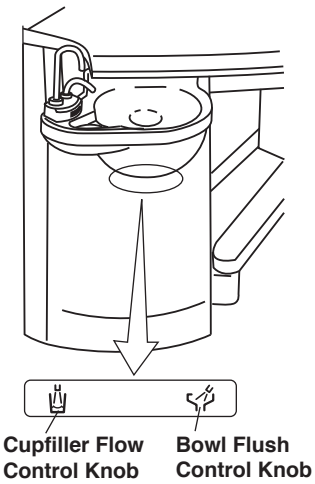


Fig.4-23 Table Unit Section Control Knobs

(10) Cuspidor Unit Control Panel (**Fig.4-24**)
Assistant's syringe air and water flow control knobs, service air and water outlet and service water control knob are located on the cuspidor unit control panel.

A. Assistant's Syringe Flow Control Knob
The assistant's syringe flow control knobs adjust assistant's syringe air and water flow.
The yellow capped knob is the air flow control knob, the blue capped knob is the water flow control knob.

B. Service Water Outlet
The service water outlet provides quick-connect water.

C. Service Water Outlet Control Knob
The water volume of service outlet can be adjusted by the service water outlet control knob.

D. Service Air Outlet
The service air outlet provides quick-connect air.

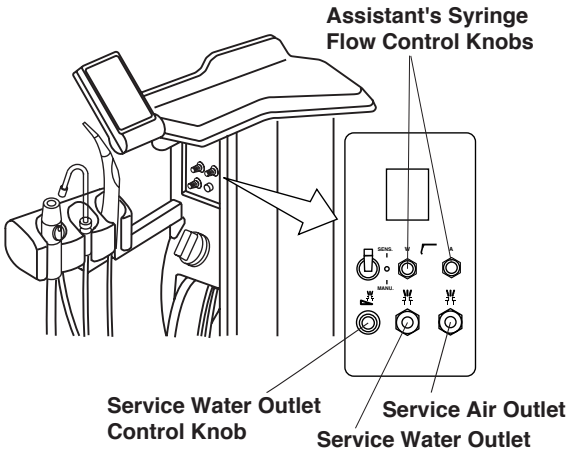


Fig.4-24 Cuspidor Unit Control Panel

Note : Turning a control knob counterclockwise increases flow volume and turning clockwise decreases. (**Fig.4-22**)

4-5. UNIT SUPPLEMENT FUNCTIONS

Rapport unit provides supplement functions (Count down timer, Control panel switching sound ON/OFF, Fiber optic handpiece illumination timing and Flush out system).
Supplement functions are selected by the function switch.

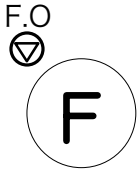
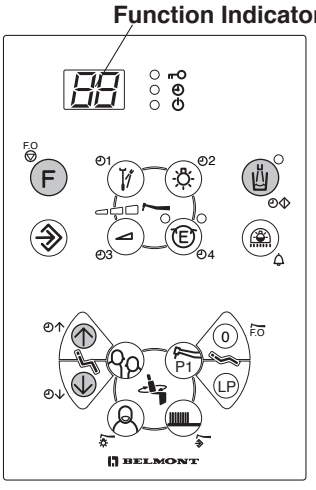


Fig.4-25 Function Switch

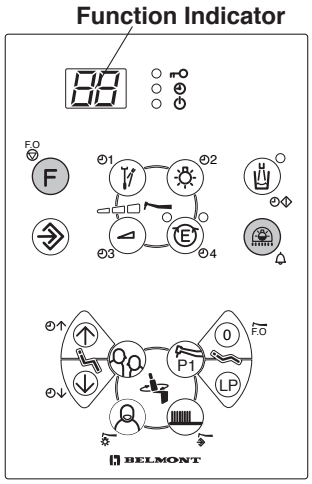
(1) Count Down Timer
The RAPPORT unit provides 2 kinds of count down timer (Non-memory mode and Memory mode).
Count down timer can be set maximum 9 mins. 90 secs. in 10 secs. segment.



Doctor Unit Control Panel

A. Non-Memory Mode Count Down Timer (**Fig.4-25 & Fig.4-26**)
Momentarily press the function switch (Ⓕ), and the function indicator to displays(F 1).
Set count down time by pressing (ⓤ) or (ⓓ) switch.
Pressing (ⓤ) switch increases and pressing (ⓓ) decreases time. (Minimum setting time is 10 secs..)
The setting time is indicated on the function indicator.
Example : Setting time 3 mins. 20 secs. is indicated as(3 2) in the function indicator.
Momentarily pressing the cupfiller switch (ⓒ) starts count down timer.
The end of setting time is informed by electronic sounds.

Fig.4-26 Count Down Timer Setting Switches (Non-Memory Mode)



Doctor Unit Control Panel

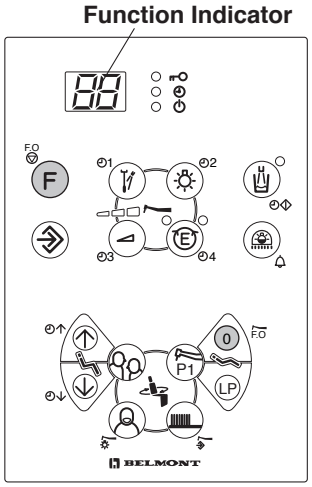
Fig.4-28 Control Panel Switching Sound ON/SFF Control

(2) Control Panel Switching Sound ON/OFF. (**Fig.4-28**)
Pressing a switch on the control panel makes an electric sound. This sound can be eliminated as follows;.
Momentarily press the function switch (Ⓕ), and the function indicator displays (F 1).
A single pressing of the extra switch (㊙) can select switching sound ON or OFF alternately. Switching sound is ON,when the extra switch indicator illuminates.
After selection of switching sound ON/OFF, keep pressing the function switch (Ⓕ) until the indicator changes to (rP).

(3) Flush Out System (**Fig.4-29**)
The RAPPORT is equipped with 2 type of flush out systems. Short time flush out is for cleaning handpiece water lines. Long time flush out is for cleaning handpiece water lines, bowl flush water line and cupfiller water line.

A. Short Time Flush Out (Flush Out for Handpiece Water Line)
Momentarily press the function switch (Ⓕ), and the function indicator displays (F 1).
Pick up the handpieces from holder and set them in bowl.
Keep pressing the auto return switch (⓪) until the indicator changes to (C 1).
Releaseing the auto return switch (⓪) starts short time flush out. Water comes out from the handpieces and stops automatically in about 40 secs.

Note : During flush out, momentarily pressing the function switch will cancel flush out immediatly.

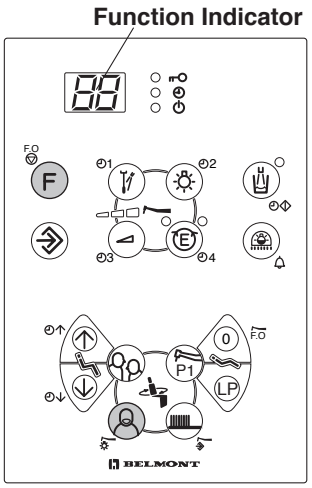


Doctor Unit Control Panel

Fig.4-29 Flush Out System Control

B. Long Time Flush Out (Flush Out for Unit Water Line)
Momentarily press the function switch (Ⓕ), and the function indicator displays (F 1).
Pick up the handpieces from holder, set them in bowl and remove the cup from the cupfiller base.
Keep pressing the auto return switch (⓪) until the indicator changes to (C2).
Releasing the auto return switch (⓪) starts long time flush out.
Flush out starts from handpiece and cupfiller and spittoon bowl one after another and stops automatically.

Note : In case the handpieces are not picked up, flush out only cupfiller and spittoon bowl one by one with (C3) indication.
During flush out, momentarily pressing the function switch (Ⓕ) will cancel flush out immediatly.



Doctor Unit Control Panel

Fig.4-30 Fiber Optic Handpiece Lighting Mode Selection

(4) Fiber Optic Handpiece Lighting Mode (**Fig.4-30**)
Fiber optic handpiece is optional.
The RAPPORT is equipped with 2 type of fiber optic handpiece lighting modes.

Mode 1 : The fiber optic light illuminates during the fiber optic handpiece is running.

Mode 2 : The fiber optic light illuminates when the fiber optic handpiece is picked up from the holder, and turns out automatically in about 4 seconds after the handpiece is returned to the holder.

Setting Fiber Optic Handpiece Lighting Mode
Momentarily press the function switch (Ⓕ) and change the function indicator displays(F1).
A single press of the consultation position switch (Ⓐ) selects **Mode 1** or **Mode 2** alternately.
After setting fiber optic handpiece lighting mode, keep pressing the function switch (Ⓕ) until the indicatior changes to (rP).

4-6. POLE MOUNT LIGHT (IO 5000) OPERATING INSTRUCTIONS

(1) Mode Selection Switch (**Fig.4-31**)

The mode selection switch is located on the cuspidor unit panel control panel.

Switching mode can be changed by the mode selection switch.

Sensor Mode ---- The dental light ON/OFF is controlled by the touchless switch.

Manual Mode---- The dental light ON/OFF is controlled by the manual switch.

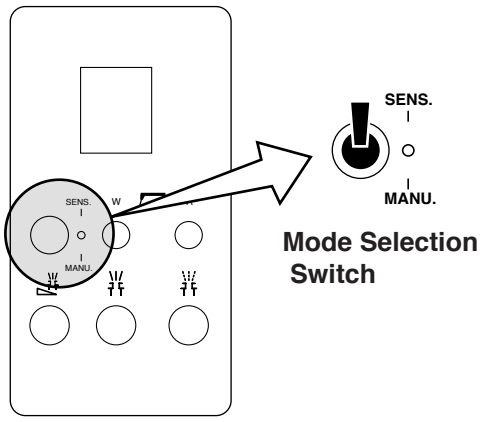


Fig.4-31 Mode Selection Switch

(2) Touchless Switch (**Fig.4-32**)

The touchless sensor switch is located on lower parts of the light head.

In sensor mode, the dental light ON/OFF can be controlled by approaching a palm to the touchless sensor switch about 60mm.

Note : Keep clean the surface of touchless sensor switch.

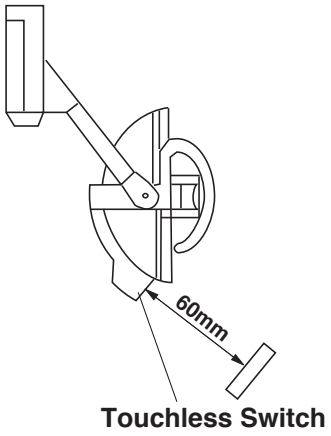


Fig.4-32 Touchless Switch

(3) Intensity Control Switch (**Fig.4-33**)

The intensity switch is located on the lower parts of light yoke.

The dental light intensity of illumination can be controlled by the intensity switch.

High ----------Turn the intensity switch to **H** position

Medium ------Turn the intensity switch to **M** position

Low ----------Turn the intensity switch to **L** position

Note : Dental light ON/OFF can be operated by the extra switch on the doctor unit control panel.
Refer to 4-4, (4).

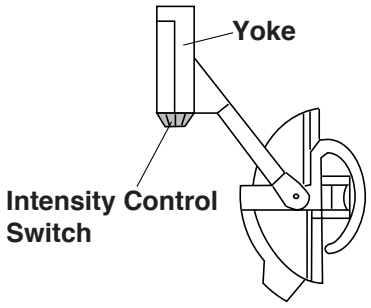
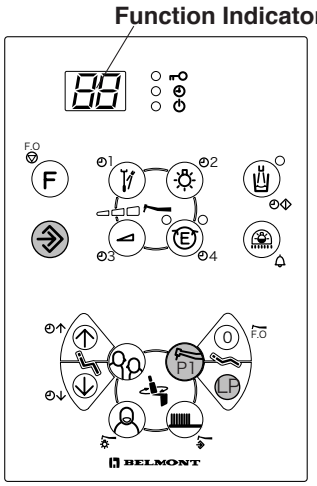


Fig.4-33 Intensity Control Switch

5. ADJUSTMENTS



Doctor Unit Control Panel

Fig.5-1 Chair Auto Mode Adjustment

5-1. CHAIR AUTO MODE POSITION ADJUSTMENTS

(1) Preset Position Adjustment (**Fig.5-1**)

The seat height and the backrest angle can be memorized at the preset position (treatment position).

A. Set the seat and backrest to the desired preset position by manual control switches.

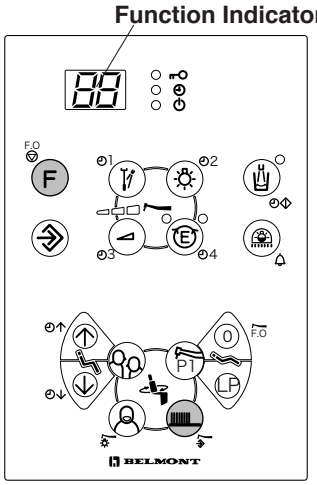
B. Momentarily press the store switch (ⓢ) and press the preset switch (ⓟ1). This position is memorized.

(2) Mouth Rinsing Position Adjustment (**Fig.5-1**)

The backrest angle for mouth rinsing can be memorized at the last position memory.

A. Set the backrest angle to the desired mouth rinsing position by manual control switches.

B. Momentarily press the store switch (ⓢ) and press the last position memory switch (ⓛⓟ). This position is memorized.



Doctor Unit Control Panel

Fig.5-2 Handpiece Holder Function Cancellation and Reset

5-2. HANDPIECE HOLDER FUNCTION CANCELLATIONAND RESET (**Fig.5-2**)

(1) Handpiece Holder Function Cancellation

Handpiece holder function can be cancelled. (The handpiececorresponding to the cancelled handpiece holder can not operate.)

How to cancel handpiece holder function.

A. Pick up the handpiece to cancel.

B. Press the function switch (Ⓕ) and change the function indicator to (F1).

C. Momentarily press the toothbrushing position switch (ⓣ).

The picked up handpiece holder function is cancelled with buzzer sound and the function indicator (HE).

Note : In case that the master switch is turned off with the handpiece is not setting into the holder completely, the handpiece holder function is cancelled automatically.

Before turning off the master switch, confirm all handpieces are setting into the holders completely.

(2) Handpiece Holder Function Reset

Cancelled handpiece holder function can be reset.

How to reset handpiece holder function.

A. Set all handpieces into holders completely.

B.Turn off the master switch and turn on the master switch again.

All handpiece holder functions are reset automatically.

6. CARE AND MAINTENANCE

⚠CAUTION

Turn off the master switch and the main switch at the initial position after daily operation or in long term interval.

6-1. CARE AND MAINTENANCE FOR CHAIR

Other than cleaning, no scheduled maintenance of chair is required.

⚠CAUTION

Do not drench the chair for cleaning.
Do not use polishing powder, solvents, strong disinfectant and hot water for cleaning.
After cleaning, wipe with a dry soft cloth and keep dry.

Upholstery can be cleaned with a neutral detergent.

Paint parts, metal parts and plastic parts can be cleaned with DURR FD333 cleaner (or equivalent). Do not drench the chair and unit. Wipe all surfaces dry after cleaning.

6-2. CARE AND MAINTENANCE FOR UNIT

(1) Cleaning Unit

⚠CAUTION

Do not drench the unit for cleaning.
Do not use polishing powder, solvents, strong disinfectant and hot water for cleaning
After cleaning, wipe with a dry soft cloth and keep dry.

All surfaces can be cleaned with DURR FD333 cleaner (or equivalent).

Spray the cleaner (DURR FD333) on cloth and wipe the surfaces with the cloth.

Do not drench the chair and unit. Wipe all surfaces dry after cleaning.

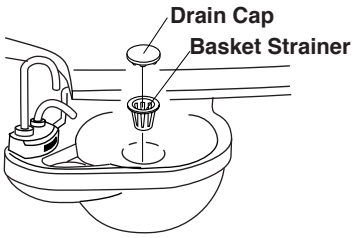


Fig.6-1 Spittoon Bowl

(2) Cuspidor Bowl (**Fig.6-1**)
Take out the drain cap and the basket strainer in the centre of spittoon bowl and clean them.

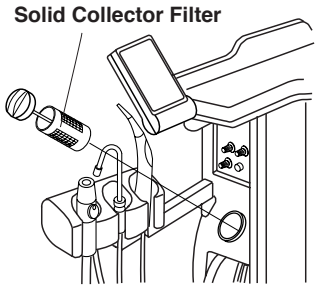


Fig.6-2 Solid Collector

(3) Solid Collector (**Fig.6-2**)
Pull out the solid collector with filter and clean it.

(4) Handpiece

1. Vacuum Handpiece and Saliva Ejector (**Fig.6-3**)

A. Pull and remove the top parts of each handpiece and clean strainer.

B. After daily operation, run two cup of clean water through handpieces to clean inside.

Sterilization

Vacuum Tip/Saliva Ejector Tip/Vacuum Cap/Vacuum Handpice Body/Saliva Ejector Handpiece Body can be sterilized with autoclave. Vacuum handpiece body and saliva ejector body must be assembled before autoclaving.

A. Wash off dirt of the handpiece with natural detergent.

B. Rinse the handpiece with tap water

C. Insert the handpiece in a sterilization pouch and seal it.

D. Autoclave for 20 min. at 121°C

Note: The slide knob can be autoclaved 100 times and is an expendable supply.

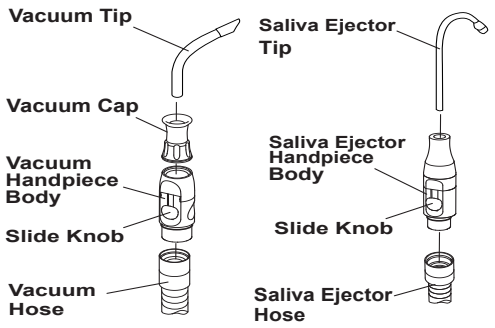


Fig.6-3 Vacuum Handpiece and Saliva Ejector

⚠CAUTION

• Skip dry cycle.

Note : After cleaning the handpieces, apply a white vaseline lightly on the rubber parts (O-Ring) and screws parts for long life.

Keep the handpieces in a clean place

2. Syringe / Micro Motor / Air Motor / Turbine / Scaler

Sterilize the handpiece according to manufacturer's operating manual.

3. Belmont 77 Syringe (**Fig.6-4**)

A. Remove the nozzle from syringe and clean it

Sterilization

The nozzle can be sterilized with autoclave.

A. Wash off dirt of the nozzle with natural detergent.

B. Rinse the nozzle with tap water.

C. Insert the nozzle in a sterilization pouch and seal it.

D. Autoclave for 20 min. at 121°C

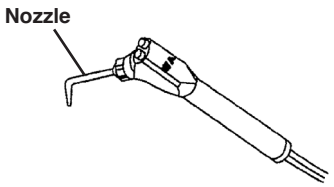


Fig.6-4 Belmont 77 Syringe

⚠CAUTION

• Skip dry cycle.

Note: Keep the syringes in a clean place

4. Tubing and Hose

It is recommended that Durr FD333 be used to clean the exterior parts of tubing and hose.

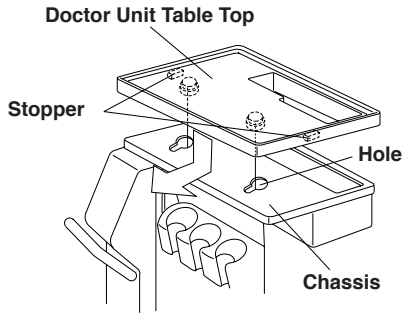


Fig.6-5 Doctor Unit Table Top

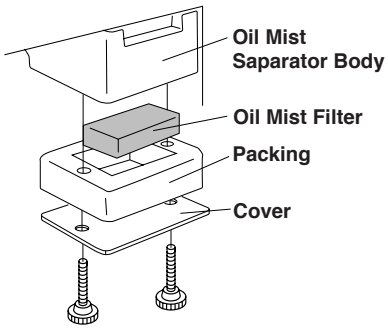


Fig.6-6 Oil Mist Separator

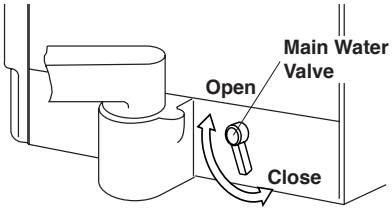


Fig.6-7 Main Water Valve

(5) Doctor Unit Table Top (**Fig.6-5**)
Doctor unit table top is detachable for cleaning.
A. Detaching doctor unit table top
Keep pulling the both side of stoppers and slide the table top to rear side.

B. Attaching doctor unit table top
Line up the front side of table top to the front side of chassis. Put the hooks located rear side of table top on the holes on chassis and slide it to front side.

Note : Detach and attach the table top with nothing on the tabletop.

(6) Oil Mist Separator (**Fig.6-6**)
Handpiece oil mist separator is located on the rear side of the doctor unit table.
Once a week open the oil mist separator and clean the oil mist filter.

(7) Drain Valve for Air Filter in Utility Section
Once a week open the drain valve in the utility section and drain off water from the air filter.

(8) Main Water Valve (**Fig.6-7**)
Main water valve is located on the table unit base.
Turn off the main water valve after daily operation or in long term interval.

6-3. CARE AND MAINTENANCE FOR POLE MOUNT LIGHT (IO 5000)

(1) Cleaning Light
Wipe the light parts with a dry soft cloth.
In case heavy dirt, it can be cleaned with a neutral detergent.
After cleaning, wipe it with a dry soft cloth and keep dry.

(2) How to Change Light Bulb

⚠CAUTION

Before changing light bulb, turn the light power off. Wait until the light parts are cool down and change the light bulb.
Do not touch the glass part of light bulb directly.

A. Turn the bulb cover screw 90˚ counterclockwise and remove the bulb cover with the front cover (**Fig.6-8**)
B. Reconnect the light bulb connector and remove the light bulb spring.
Change the light bulb and reattach the light parts. (**Fig.6-9**)

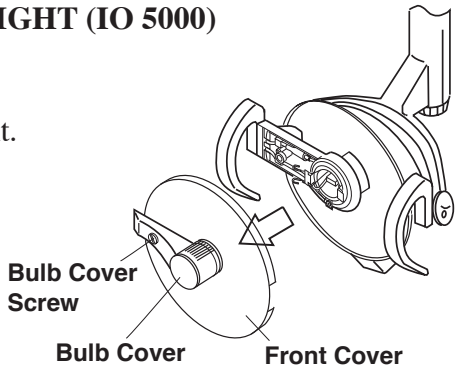


Fig.6-8 Removing Light Cover and Bulb Cover (IO 5000)

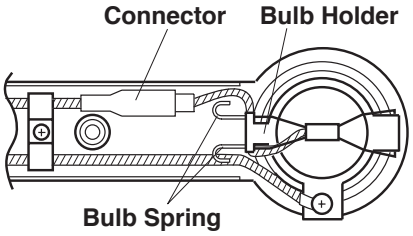


Fig.6-9 Changing Light Bulb

7. ELECTROMAGNETIC COMPATIBILITY(EMC)

Medical electrical equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.

Portable and mobile RF communications equipment can affect medical electrical equipment.

The equipment or system should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the equipment or system should be observed to verify normal operation in the configuration in which it will be used.

Guidance and manufacture's declaration – electromagnetic emissions		
The RAPPORT is intended for use in the electromagnetic environment specified below. The customer or the user of the RAPPORT should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The RAPPORT uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The RAPPORT is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ Flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacture's declaration – electromagnetic immunity			
The RAPPORT is intended for use in the electromagnetic environment specified below. The customer or the user of the RAPPORT should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic file. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25cycle <5% U_T (>95% dip in U_T) for 5 s	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycle 70% U_T (30% dip in U_T) for 25cycle <5% U_T (>95% dip in U_T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the RAPPORT requires continued operation during power mains interruptions, it is recommended that the RAPPORT be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE U_T is the a.c. mains voltage prior to applications of the test level.			

Guidance and manufacture's declaration - electromagnetic immunity

The RAPPORT is intended for use in the electromagnetic environment specified below. The customer or the user of the RAPPORT should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF communications equipment should be used no closer to any part of the RAPPORT, including cables, than the recommended separation distance calculated from the equation applications to the Frequency of the transmitter.
			Recommended separation distance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz outside ISM bands[a]	3 Vrms	$d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2.5 GHz
			Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).
			Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b]
			Interference may occur in the vicinity of equipment marked with the following symbol:

NOTE 1 At 80 MHz and 800MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by adsorption and reflection from structures, objects and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the RAPPORT is used exceeds the applicable RF compliance level above, the RAPPORT should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the RAPPORT.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Essential performance (purpose of IMMUNITY testing)

Unless operated by the switches for chair control, the chair section of the RAPPORT does not make any movements, except for sounding a buzzer and switching on/off the indicator.

Recommended separation distances between
Portable and mobile RF communications equipment and the RAPPORT

The RAPPORT is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the RAPPORT can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the RAPPORT as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	**Separation distance according to frequency of transmitter** m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	**80 MHz to 800 MHz** $d = 1.2\sqrt{P}$	**800 MHz to 2.5 GHz** $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by adsorption and reflection from structures, objects and people.

8. LIST OF COMPATIBLE HANDPIECES

	DESCRIPTION
Syringe	LUZZANI(3-way) Minilight w/Light
	LUZZANI(6-way) Minilight w/Light
	DCI (3-way)
Turbine	BIEN AIR BORA S36L / UNIFIX with LIGHT
	NSK Ti-Max X
Air motor	BIEN AIR Aquilon 830 / UNIFIX with LIGHT /PM1132
	NSK EX-203 / EX-6
Micromotor	BIEN AIR MC3LK / PLMP021PCB. / PM1132
	BIEN AIR MC3LK / PL970 PCB. / PM1132
	BIEN AIR ISOLITE(LK 40 IR E) / PLMP021PCB. / PM1132
	BIEN AIR ISOLITE(LK 40 IR E) / PL970. / PM1132
	NSK TIM-40J / DA-290N PCB. / EX-6
Scaler	SATELEC SP4055 w/Light
	EMS Scaler
	NSK VARIOS VA 150 LUX(w/light)

NOTE

EC REP

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